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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,527	08/10/2001	Roger S. Vickers	13746	4738

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EXAMINER

GREGORY, BERNARR E

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,527

Applicant(s)

VICKERS, ROGER S.

Examiner

Bernarr E. Gregory

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-112 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-112 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3662

1. Claims 1-112 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is indefinite and unclear in that the measurement method lacks transmitting steps to supply the scattered laser and radar radiation. The same is true of claims 81, 85, 98, 108, and 111.

Independent claim 40 is indefinite and unclear in that the measurement system lacks transmitting means to supply the scattered laser and radar radiation. The same is true of claims 80, 89, 102, 107, 109, and 110.

Independent claims 82, 97, and 112 are indefinite and unclear in that they fail to claim a method, apparatus, or a computer-program product.

Independent claim 109 is indefinite and unclear in that it is a single-means claim. Please see MPEP 2164.08(a). The single means or claim element recited in claim 109 is the claimed "processor circuit."

Independent claim 83 is indefinite and unclear in that it recites a data structure without reciting a medium. Please see section IV.B.1(a) of the Guidelines set forth in MPEP 2106.

Independent claim 95 is indefinite and unclear in that it lacks clearly claimed transmitting and receiving means to produce the data from a scattered laser pulse.

Independent claim 96 is indefinite and unclear in that there is no clearly set forth code to transmit and receive laser pulses to supply the data as claimed.

Throughout claims 1-112, the uses of “configured to ...” phrases make the claims indefinite and unclear in that the claims fail to set forth clearly and definitely what configuration is claimed that achieves the desired function or results. For example, on line 2 of claim 72, there is no clear and definite recitation of the configuration that achieves the applying of “a migration algorithm to said data.”

Throughout claims 1-112, the uses of “operable to ...” phrases make the claims indefinite and unclear. For example, on lines 1-2 of claim 41, it is unclear how “operable to receive” differs from simply “to receive” in context.

Throughout claims 1-112, the uses of “migration algorithm” are indefinite and unclear in context. Please see 37 CFR 1.75(d)(1).

Dependent claims 2-39, 41-79, 84, 86-88, 90-94, 99-101, and 103-106 are unclear in that they depend from unclear independent claims.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The specification is objected to under 37 CFR 1.71 as failing to teach one of ordinary skill-in-the-art how to make and to use the invention.

Independent claim 109 is set forth as an apparatus claim, but it sets forth only a single claim element (i.e., the “processor circuit”). This claim 109 is a single-means claim. Please see MPEP 2164.08(a).

Art Unit: 3662

4. Claim 109 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Please see the remarks in section 3 hereinabove.

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 82, 83, 84, 97, and 112 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 82, 97, and 112 are non-statutory in that they claim only a signal. Even if the signal were considered to be some sort of computer code or software, it could not be statutory without being claimed on a computer-readable medium. Please see MPEP 2106.

Independent claim 83 and dependent claim 84 are non-statutory in that the data structure is claimed without residing on a computer-readable medium. In the Guidelines in MPEP 2106 at section IV.B.1., it is stated that in order to be statutory a data structure must impart functionality. The recited matter in claims 83 and 84 is merely data. It is neither software nor code. In the same Guidelines just mentioned above at section IV.B.1(a), it is stated that a data structure claimed without a medium is descriptive material per se, and thus, non-statutory subject matter. Please also note section IV.B.1(b) of the Guidelines.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3662

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 8-12, 14, 18, 19, 21, 24, 26, 32, 34-43, 46-51, 53, 63, 65, 71, 73, 74-81, 85-87, 89-93, 95, 96, 98-100, 102-105, and 107-111 are rejected under 35

U.S.C. 102(b) as being anticipated by Vickers (U.S. Patent 4,495,500).

Before discussion of the rejection set forth here, it is noted that the term “radar” is commonly used in the art as including lidar and that the term used for lidar is “laser radar.” For example, please see the title of Leonard et al (U.S. Patent 6,137,566) as an example. Thus, the term “radar” is read broadly in Vickers (U.S. Patent 4,495,500) to include both RF radar and laser radar.

Using independent claim 1 as exemplary, Vickers (U.S. Patent 4,495,500) uses two radars to do environmental measurement, either of which could be a laser radar within the broad reading of the term radar as discussed above. This meets the first two method steps of claim 1. As a topographical mapping system and method, clearly Vickers (U.S. Patent 4,495,500) has the claimed step of storing data as set forth in claim 1.

The further limitations of dependent claims 2-3 are fully met by Vickers (U.S. Patent 4,495,500) as being met by the radar transmitter and receiver (i.e., a laser radar).

The further limitations of dependent claim 4 are fully met by Vickers (U.S. Patent 4,495,500) in that the angle in Vickers (U.S. Patent 4,495,500) would inherently be at a certain angle (i.e., the angle would not be random).

The further limitations of dependent claims 8-9 are met by the receivers of the Vickers (U.S. Patent 4,495,500) radars.

The further limitations of dependent claim 10 are fully met by Vickers (U.S. Patent 4,495,500) in that the 200 MHz signal mentioned at column 5, lines 3-8 of the reference is approximately 1.5 meters in wavelength, which is "at least on the order of one meter." With respect to the further limitations of dependent claim 11, please note that the 1.5 meter wavelength just mentioned is between 0.7 and 2 meters.

The further limitations of dependent claim 12 are met by either radar transmitter in Vickers (U.S. Patent 4,495,500). Similarly, the further limitations of dependent claim 14 are fully met by the transmitting and receiving of either radar in Vickers (U.S. Patent 4,495,500).

The further limitations of dependent claim 18 are met either by Doppler shift of the reflected radar signal or by IF mixing that is inherent at either radar receiver in Vickers (U.S. Patent 4,495,500).

The further limitations of dependent claim 19 are met by IF mixing that is inherent in either radar receiver in Vickers (U.S. Patent 4,495,500).

The further limitations of dependent claim 21 are fully met by items 90 and 92 in Figure 6 of Vickers (U.S. Patent 4,495,500).

With respect to the further limitations of dependent claim 24, inherently any mapping system such as Vickers (U.S. Patent 4,495,500) stores some

context data with the mapping data to identify what terrain features (at least in reference to location) are represented by the radar returns.

With respect to the further limitations of dependent claim 26, time context information would inherently be stored in Vickers (U.S. Patent 4,495,500) to identify what pass over an area was represented by data (multiple passes over the same area being typical). Without the batch identification that time context data provides, the data could not be meaningfully interpreted later.

The further limitations of dependent claims 32 and 34-39 are fully met by Vickers (U.S. Patent 4,495,500) as a mapping radar system.

The remarks with respect to claims 40-43, 46-51, 53, 63, 65, 71, 73, 74-81, 85-87, 89-93, 95, 96, 98-100, 102-105, and 107-111 are substantially those just made with reference to claims 1-4, 8-12, 14, 18, 19, 21, 24, 26, 32, 34-39.

With reference to the further limitations of dependent claims 43 and 46, these would be met by the antenna mount inherent in Vickers (U.S. Patent 4,495,500) in that such a mount is set at some "desired angle" (claim 43) so that the return signal is recovered (claim 46).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3662

9. Claims 13, 16, 17, 20, 29, 30, 52, 55, 56-58, 60, 64, 68, 69, 101, and 106 rejected under 35 U.S.C. 103(a) as being unpatentable over Vickers (U.S. Patent 4,495,500).

With respect to the further limitations of dependent claims 13, 52, 101, and 106, it would have been obvious to one of ordinary skill-in-the-art that the old and well-known UWB signals could be used in Vickers (U.S. Patent 4,495,500) for the known advantages of greater penetration.

With respect to the further advantages of dependent claims 16 and 55, it would have been obvious to one of ordinary skill-in-the-art to use a common transmit/receive antenna in Vickers (U.S. Patent 4,495,500) for the advantages of lower cost, lower weight, and elimination of leakage.

With respect to the further limitations of dependent claims 17 and 56, it would have been obvious to one of ordinary skill-in-the-art to use the old and well-known "blanking" as claimed in claims 17 and 56 to eliminate leakage.

With respect to the further limitations of dependent claim 20, it would have been obvious to one of ordinary skill-in-the-art to use the old and well-known I and Q signals in order to recover necessary phase information from the returned radar echoes.

With respect to the further limitations of dependent claims 29, 30 and 68-69, it would have been obvious to store flight path context information and any other context information deemed useful by the operator in Vickers (U.S. Patent 4,495,500) to aid in data identification and analysis.

Art Unit: 3662

The further limitations of dependent claims 57 and 58 are met by the IF mixing that is inherent in Vickers (U.S. Patent 4,495,500).

With respect to the further limitations of dependent claim 60, please see items 90 and 92 in Figure 6 of Vickers (U.S. Patent 4,495,500).

With respect to the further limitations of dependent claim 64, it would have been obvious to one of ordinary skill-in-the-art to store location information, such as the old and well-known GPS information, as context information to identify the location of the record return echoes.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hsu et al ('732) and Miller et al ('717) are of general interest for showing environmental sensing systems and methods that are similar to Applicant's invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernarr E. Gregory whose telephone number is (703) 306-5765. The examiner can normally be reached on weekdays from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza, can be reached on (703) 306-4171. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9326.

Art Unit: 3662

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

A handwritten signature in black ink, appearing to read "Bernarr E. Gregory", with a stylized, sweeping flourish extending to the right.

Bernarr E. Gregory
Primary Examiner
Art Unit 3662